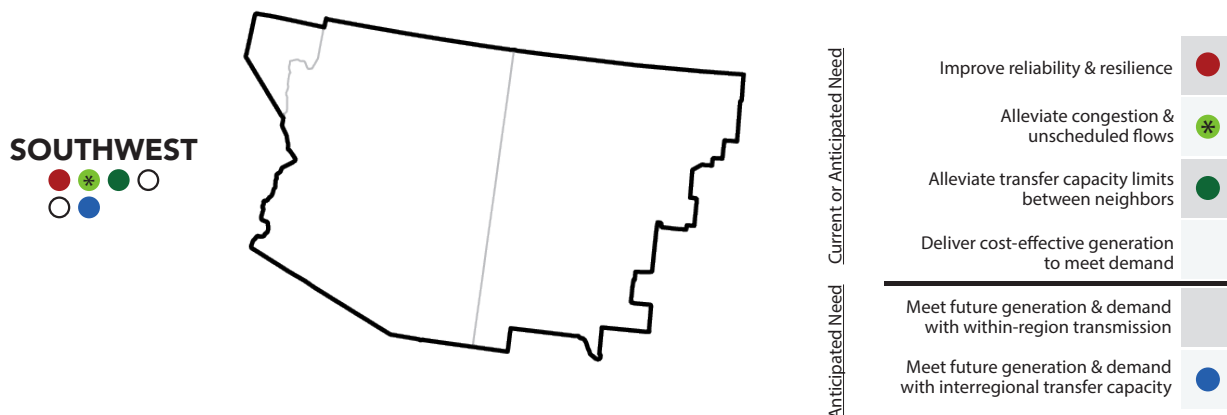


FACT SHEET

2023 NATIONAL TRANSMISSION NEEDS STUDY SOUTHWEST REGION

The U.S. Department of Energy's Grid Deployment Office (GDO) released the National Transmission Needs Study ("Needs Study") in October 2023. The Needs Study is the Department's **triennial state of the grid** report. The Needs Study identifies transmission needs and provides information about current and anticipated future capacity constraints and congestion on the Nation's electric transmission grid. In this fact sheet, we highlight the transmission needs of the Southwest. The Needs Study provides further detail on the benefits of transmission that could be realized throughout the country.



**Wholesale market price data is limited for non-RTO/ISO regions. Absence of data does not necessarily indicate that there is no need for transmission to alleviate congestion and/or unscheduled flows in non-RTO/ISO regions.*

FINDINGS OF TRANSMISSION NEED IN THE SOUTHWEST REGION

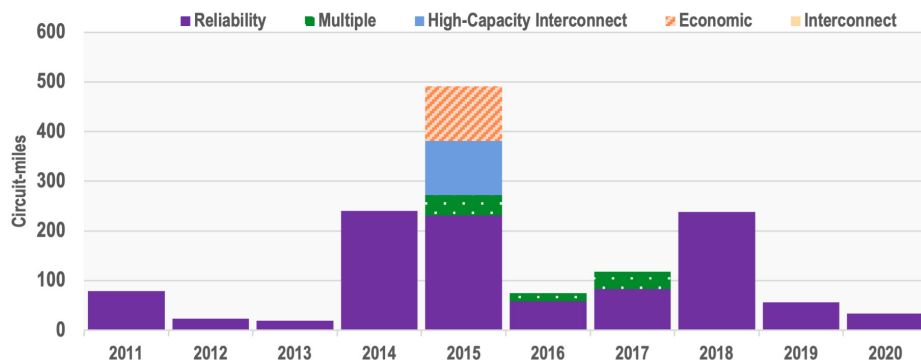
- › **Improve reliability and resilience.** The Southwest region is approaching system conditions which present the risk of load curtailment during extreme weather events and wildfires, especially as the region's reliance on variable energy resources to meet peak demand increases. Additional transmission upgrades in the near term would reduce risks to electricity reliability from extreme events.
- › **Alleviate congestion and unscheduled flows.** Unscheduled flows persist on Qualified Path 31 located near the southern Colorado and northern New Mexico border; additional transmission deployment would alleviate these unscheduled flows.
- › **Alleviate transfer capacity limits between the Southwest region and Texas.** High congestion value of interregional transmission from 2012–2020 exists between the Southwest region and Texas, with an average marginal value of transmission equal to \$25/MWh. A high congestion value indicates that increased transmission between the regions would reduce system congestion and constraints.
- › **Meet future generation and demand with additional interregional transfer capacity.** It is anticipated that the Southwest will need between 2.3 and 4.7 GW of additional transfer capacity with the Plains region in 2035 (median of 3.7 GW, a 914% increase relative to the 2020 system) to meet moderate load growth and high clean energy growth future scenarios. Smaller additional transfers between the Southwest and Mountain (median value of 1.7 GW) and California (median value of 0.3 GW) regions may also be required.

HELPFUL LINKS

- › Read the full study at www.energy.gov/gdo/national-transmission-needs-study
- › Contact GDO with additional questions: transmission@hq.doe.gov

FINDINGS AT A GLANCE

Circuit-miles of new or rebuilt transmission lines ($\geq 100\text{kV}$) energized between 2011-2020 by project driver.

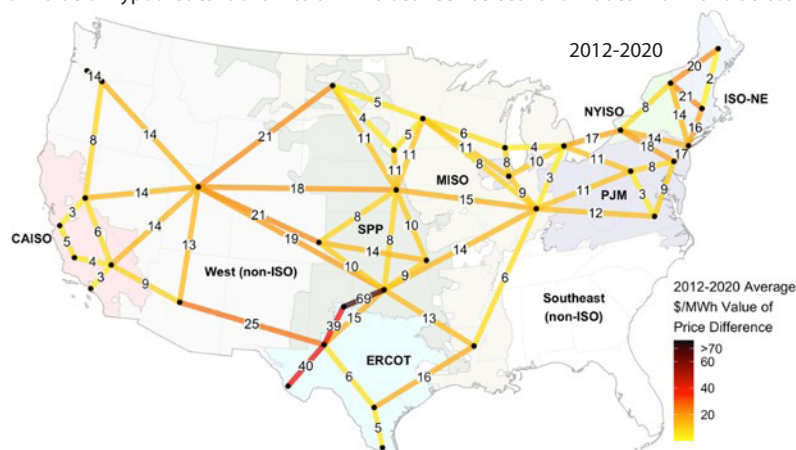


Transmission projects energized over the last decade in the Southwest region were predominantly, but not exclusively, installed to **address reliability concerns**.

Congestion value of hypothetical transmission links between select zonal nodes within and across regions.

Wholesale market price differentials demonstrate a **high value of new interregional transmission exists between the Southwest region and Texas**.

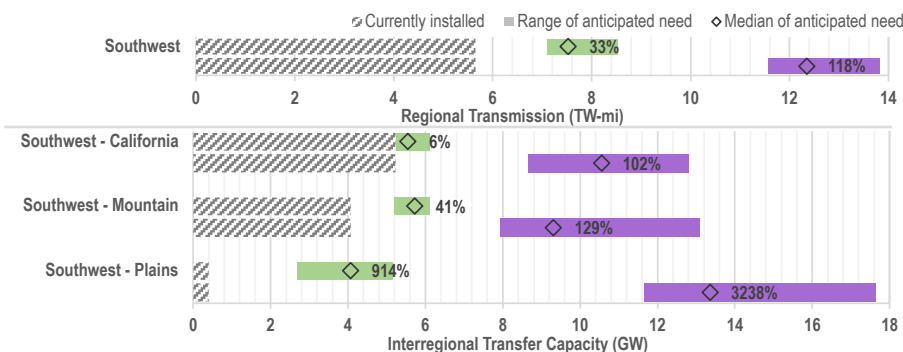
The average marginal value of transmission between the Southwest region and Texas from 2012–2020 is equal to \$25/MWh.



Note: Wholesale market price data is limited for non-RTO/ISO regions. Absence of data does not necessarily indicate that there is no need for transmission to alleviate congestion and/or unscheduled flows in non-RTO/ISO regions. Findings organized using geographic region nomenclature as described in the Needs Study. Source: D. Millstein, et al. (2022)

Within-region transmission and interregional transfer capacity need for Southwest in 2035

Range of new transmission need for future scenarios with **moderate load and high clean energy growth** (green, top for each region) and high load and **high clean energy growth** (purple, bottom). Median % growth compared to 2020 system shown.



Capacity expansion modeling results for the Moderate/High scenario group suggest an anticipated need of **1.9 TW-miles of new within-region transmission by 2035** (33% growth relative to 2020) and **3.7 GW of new interregional transmission deployment with the Plains region by 2035** (914% growth relative to 2020).

Median 2035 capacity expansion modeling results for Moderate/High scenario group.